

**AMENDMENT TO DRAWINGS**

*The four (4) Replacement Sheets of drawings attached as part of the Appendix are submitted to address the formal matters identified by the Examiner in the drawing objection in the pending Office Action. These four (4) Replacement Sheets, which include Figures 1a, 1b, 2a, 2b, 3a, 3b, 4a, and 4b, replace the sheets of drawings currently pending in this application.*

**REMARKS*****Summary of the Amendment***

Upon entry of the above amendment, claim 20 will have been amended and four (4) Replacement Sheets will have been submitted to replace the pending drawings sheets directed to Figures 1a, 1b, 2a, 2b, 3a, 3b, 4a, and 4b. Accordingly, claims 20 – 49 will currently remain pending.

***Summary of the Official Action***

In the instant Office Action, the Examiner has indicated that claims 44 – 49 are allowed and that claims 29 – 32 and 35 – 43 contain allowable subject matter and would be allowable if presented in independent forms that include all the features of their base claims and any intervening claims. Further, the Examiner has objected to the drawings based upon formalities and has rejected claims 20 – 28, 33, and 34 over the art of record. By the present amendment and remarks, Applicant submits that the rejections have been overcome, and respectfully requests reconsideration of the outstanding Office Action and allowance of the present application.

***Acknowledgment of Allowable Subject Matter***

Applicant gratefully acknowledges and agrees with the Examiner's indication of that claims 44 – 49 are allowed. Moreover, Applicant gratefully acknowledges and agrees with the Examiner's indication that claims 29 – 32 and 35 – 43 contain allowable subject matter and would be allowable if presented in independent forms that include all the features of their base claims and any intervening claims.

While Applicant has not presented any of these claims in independent and allowable form in response to the pending Office Action, the allowable subject matter

contained in the identified claims is acknowledged, as is the allowability of the subject matter recited in these claims prior to entry of the pending amendment.

***Objection to Drawings is Moot***

Concurrently herewith, Applicant is submitting four (4) Replacement Sheets of drawings to address the formal matters identified by the Examiner in the pending objection. As the drawings on the Replacement Sheets utilize uniformly thick and well defined lines, numbers and letters, Applicant submits that pending objection is moot and should be withdrawn.

Accordingly, consideration and entry of the Replacement Sheets, and acknowledgment that the drawings on the Replacement Sheets are acceptable is requested.

***Traversal of Rejection Under 35 U.S.C. § 102(b)***

Applicant traverses the rejection of claims 20 – 28 under 35 U.S.C. § 102(b) as being anticipated by CAREY (U.S. Patent No. 3,711,027). The Examiner asserts CAREY shows all of the recited features of the claims, including a first part 16, a second part 18, and rolling bellows 15. Applicant traverses the Examiner's assertions.

By the present amendment, independent claim 20 has been amended to even more clearly set forth the subject matter of the invention. Accordingly, Applicant's independent claim 20, as currently amended, recites, *inter alia*, a portion of the deformable rolling bellows arrangement *is connected to an external surface of said second part and to a fixed part* of one of the rocket engine, the aircraft, or the spacecraft. Applicant submits CAREY fails to show each of the above-noted features of the invention.

The CAREY document has been discussed at some length throughout the prosecution of the pending application. While Applicant has repeatedly disagreed with the Examiner's assertion that element 15 of CAREY is a rolling bellows, the Examiner has again maintained this reasoning in the pending rejection. In view of the presently submitted amendment and remarks, Applicant requests that the Examiner reconsider and withdraw the pending rejection of independent claim 20, as well as the rejection of claims 21 – 28.

Applicant acknowledges that CAREY discloses an intermediate larger diameter portion 15 of a nozzle structure that is initially inter-rolled into a convolute form. As described, this inter-rolled portion of the nozzle structure including portions 15 and 16 are, at best, flexible so as to *unroll* as outer portion 18 extends away from inner portion 16. Further, Applicant notes CAREY's disclosure that the nozzle or "bell-shaped sleeve" is formed of a thin, lightweight heat-resistant material, and it is this material that enables the middle portion of the sleeve to be inter-rolled into convolute form.

However, a careful review of CAREY's illustrations and associated disclosure reveals that the bell shaped sleeve is a *continuous element*, i.e., the elements identified by the Examiner as the first part, the second part and the rolling bellows are integrally formed in a single unitary or continuous element. Because there is no delineation between the "elements" identified by Examiner in CAREY, Applicant submits that there is no arguable disclosure that the recited portion of the deformable rolling bellows arrangement *is connected to an external surface of said second part and to a fixed part of one of the rocket engine, the aircraft, or the spacecraft, as recited in at least Applicant's independent claim 20, as amended.*

Further, as the only apparent disclosure by CAREY of the nozzle structure is that the entirety of the bell-shaped nozzle is constructed of a continuous, albeit initially inter-rolled into convolute form, material, Applicant submits this document cannot arguably disclose, either expressly or implicitly, the expressly recited arrangement of the recited portion of the deformable bellows in relation to the recited second and fixed parts. That is, Applicant's independent claim 20, as amended, recites, *inter alia*, a portion of the deformable rolling bellows arrangement is *connected to an external surface of said second part and to a fixed part of one of the rocket engine, the aircraft, or the spacecraft*. As CAREY does not disclose a connection of a portion of the deformable rolling bellows arrangement to an external surface of the second part and/or to the fixed part, Applicant submits the expressly recited arrangement of the portion of the deformable rolling bellows arrangement being *connected to an external surface of said second part and a fixed part of one of the rocket engine, the aircraft, or the spacecraft*, cannot even arguably be disclosed in the applied art.

In reviewing CAREY's specification, Applicant finds no contraindication that the entirety of the sleeve is made of a continuous thin flexible material, and the Examiner has certainly not shown any such disclosure. Because the Examiner identified "deformable rolling bellows" 15 of CAREY are integrally formed in a single continuous material with both the Examiner identified "first part" 16 and Examiner identified "second part" 18, Applicant submits CAREY cannot arguably disclose a portion of the deformable rolling bellows arrangement *is connected to an external surface of said second part and to a fixed part* of one of the rocket engine, the aircraft, or the spacecraft.

Thus, by the present amendment, independent claim 20 even more clearly recites that a portion of the deformable rolling bellows arrangement not only is *connected said second part*, but is *connected to an external surface of said second part*, which is neither expressly or implicitly described by the continuous unitary construction of the bell shaped sleeve of CAREY. Because CAREY does not expressly or even impliedly disclose separate elements forming the bell-shaped nozzle, Applicant submits this document cannot be construed as disclosing the recited connection of a portion of the deformable rolling bellows arrangement *to an external surface of said second part*.

In a similar manner, Applicant notes that CAREY likewise fails to expressly or impliedly disclose that the recited portion of the deformable rolling bellows arrangement is also connected to *a fixed part of one of the rocket engine, the aircraft, or the spacecraft*. Because the apparent unitary continuous construction of CAREY's nozzle also fails to expressly or impliedly disclose the recited *connection* of elements presented in at least Applicant's independent claim 20, Applicant submits that, for this additional reasoning, CAREY also fails to anticipate the embodiment of the invention recited in at least independent claim 20. Further, as the recited first part is additionally recited in independent claim 20 as being fixedly arranged on a motor of the rocket engine, Applicant wishes to clarify and confirm that the first part is an included element of the recited *fixed part of one of the rocket engine, the aircraft, or the spacecraft* of independent claim 20.

As CAREY fails to show at least the above-noted features of the invention, Applicant submits the art of record fails to show each and every recited feature of the invention. Therefore, Applicant submits the Examiner has failed to establish an adequate

evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b), such that the pending rejection is improper and should be withdrawn.

Further, Applicant notes that claim 24 further defines the deformable rolling bellows arrangement in such that manner that CAREY cannot even arguably disclose this subject matter. In particular, even assuming, *arguendo*, one ordinarily skilled in the art would understand the folded portion of CAREY's nozzle as being a rolling bellows arrangement (which Applicant submits one would not), Applicant submits that there is no logical interpretation of this portion of CAREY as showing *a first rolling bellows* structured and arranged *to form a seal for the gaseous fluid* that is connected to one of a circumferential area of said first part or another fixed part of the aircraft or spacecraft and to a circumferential area of said second part, and *a second bellows* structured and arranged *to form a further seal of the volume for the gaseous fluid limited by the first said rolling bellows*.

Moreover, Applicant submits that claims 21 – 28 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits CAREY fails to anticipate each and every recited feature of at least claims 21 – 28, such that the rejections of these claims are likewise improper and should be withdrawn.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 20 – 28 under 35 U.S.C. § 102(b) and indicate these claims are allowable in the next official communication.

***Traversal of Rejection Under 35 U.S.C. § 103(a)***

Applicant traverses the rejection of claims 33 and 34 under 35 U.S.C. § 103(a) as being unpatentable over CAREY in view of WILLIS (U.S. Patent No. 4,676,436. The Examiner acknowledges CAREY does not show a retaining device to brake movement of second part during extension of the second part, but asserts it would have been obvious to include such device in view of the disclosure of WILLIS. Applicant traverses the Examiner's assertions.

Applicant notes WILLIS is directed to a linkage and support system connecting two sections of a nozzle. However, like CAREY, WILLIS fails to disclose a portion of the deformable rolling bellows arrangement *is connected to an external surface of said second part and to a fixed part* of one of the rocket engine, the aircraft, or the spacecraft.

As neither of the applied documents discloses the above-noted feature of at least independent claim 20, Applicant submits no proper combination of these documents can render unpatentable the invention recited in at least independent claim 20.

Further, as WILLIS fails to provide any arguable disclosure of a closed volume, formed at least in part by a rolling bellows arrangement, that extends one portion of the nozzle relative to another portion when acted on by a gaseous fluid that enlarges the volume, Applicant submits this document fails to provide any articulated reasoning or rationale for modifying CAREY in any manner that would render the invention recited in at least independent claim 20 obvious under 35 U.S.C. § 103(a).

Further, while the Examiner asserts it would have been obvious to modify CAREY to include the linkage structure of WILLIS to brake movement of the second



part as it is moved into the second operating position, Applicant submits the applied art fails to support these assertions.

As noted above, the bell-shaped nozzle of CAREY is a continuous unitary element, such that, when unrolled, the construction of the nozzle prevents further extension of the nozzle, i.e., the nozzle cannot extend beyond the extent of material forming the nozzle. Since CAREY is a single material element, Applicant submits that WILLIS fails to provide any articulated reasoning for modifying CAREY, since breaking of movement appears to inherently occur when the material forming the nozzle is unfolded.

Additionally, Applicant notes that the linkage of WILLIS is attached to outside of a two piece nozzle formed by apparent rigid materials. However, as CAREY discloses a thin lightweight material intended to be inter-rolled in convolute form and later unrolled, it is not apparent whether the linkage of WILLIS could have been attached to this thin, lightweight material forming the CAREY nozzle without damaging the nozzle material. Further, Applicant notes that the Examiner has not identified any disclosure that arguably suggests that one ordinarily skilled in the art would have a reasonable expectation of successfully mounting the WILLIS linkage to the nozzle material of CAREY.

Applicant further notes that the Examiner has apparently not considered whether the added weight of the linkage described by WILLIS would structurally damage the expressly disclosed thin, lightweight material forming the CAREY nozzle, nor has he arguably considered the stresses that would be likely be exerted on the thin, lightweight material of CAREY's nozzle by the linkage of WILLIS during operation of the nozzle on a rocket engine, aircraft or spacecraft. However, Applicant submits that, when the

asserted combination of documents is considered from an engineering perspective, one ordinarily skilled in the art would not reasonably expect to achieve a successful result in the combination of WILLIS' linkage to the nozzle of CAREY alleged by the Examiner in the pending rejection under 35 U.S.C. § 103(a).

As the Examiner's rejection does not fully examine the subject matter described in each prior art document in order to determine whether it would have been obvious to modify CAREY to include the linkage of WILLIS and to determine whether, if so modified, the nozzle of CAREY would continue to operate in its intended manner, Applicant submits that Examiner has failed to show that embodiments of the invention recited in at least claims 33 and 34 would have been obvious under 35 U.S.C. § 103(a).

Moreover, Applicant submits that claims 33 and 34 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits CAREY fails to anticipate each and every recited feature of at least claims 33 and 34, such that the rejections of these claims are likewise improper and should be withdrawn.

Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 33 and 34 under 35 U.S.C. § 103(a) and indicate these claims are allowable in the next official communication.

***Application is Allowable***

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

***Authorization to Charge Deposit Account***

The undersigned authorizes the charging of any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, to Deposit Account No. 19 - 0089 in order to maintain pendency of this application.

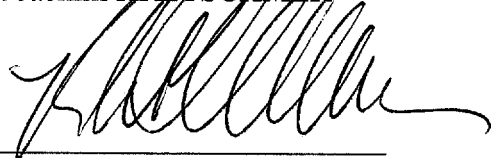
**CONCLUSION**

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 20 – 49. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Further, any amendments to the claims which have been made in this response and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully submitted,  
Joachim KRETSCHMER



Neil F. Greenblum  
Reg. No. 28,394

Robert W. Mueller  
Reg. No. 35,043

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GREENBLUM & BERNSTEIN, P.L.C.  
1950 Roland Clarke Place  
Reston, VA 20191  
(703) 716-1191